

****Unified Expansion–Contraction Theory (UCT):**

A Dynamic Monism That Also Functions as a Negation of Nothingness**

Abstract

Unified Expansion–Contraction Theory (UCT) proposes that all phenomena arise from the interplay of two fundamental and inseparable processes: expansion and contraction. These processes generate resonance, cascade interactions, and dynamic cycles observable in physical, biological, cognitive, and social systems. While serving as a general systems framework, UCT also carries significant philosophical implications. Most notably, by grounding existence in continuous dynamical activity, UCT implicitly negates the possibility of absolute nothingness. In this theory, “nothingness” cannot exist even conceptually, because contraction’s ultimate limit converges not to absence but to indistinguishable unity, a state that still possesses structure, potentiality, and relational tension.

Thus, UCT offers both a scientific unification principle and a metaphysical argument against absolute nothingness.

1. Introduction

The diverse domains of modern science—physics, biology, cognition, and social dynamics—contain many models of growth, collapse, regulation, and interaction. Yet the underlying structural similarity among these processes hints at a deeper organizing principle.

UCT argues that expansion € and contraction © form this principle.

Unlike dualistic frameworks, UCT treats E and C not as opposing substances but as reciprocal movements within a single dynamic field. They generate oscillations, bifurcations, stability, and complexity across all scales of existence.

Furthermore, the theory carries a philosophical consequence:

If all phenomena emerge from dynamic interplay, then

Absolute nothingness — a state without interaction, relation, or potential — is impossible.

This gives UECT the structure of a dynamic monism that simultaneously functions as a metaphysical refutation of nothingness.

2. Core Concepts of UECT

2.1 Expansion €

2.2

Expansion denotes the increase of scale, diversity, amplitude, or possibility. It includes:

Cosmic expansion

Biological diversification

Neural divergence and creativity

Informational proliferation

Social diffusion and cultural spread

Mathematically:

Positive feedback

Divergence

Entropy increase in open systems

2.3 Contraction ©

2.4

Contraction represents compression, stabilization, focus, or unification:

Gravitational collapse

Homeostatic regulation

Attention focusing

Social consolidation

Informational compression

Mathematically:

Negative feedback

Convergence

Entropy reduction in localized regions

2.3 Resonance

Resonance mediates all transitions between E and C. It encompasses:

Synchronization

Wave interaction

Cascade effects

Mutual coupling

Resonance implies that no process is isolated; all existence is an expression of relational dynamics.

2.5 Cyclic Dynamic Equilibrium

2.6

Systems stabilize not through stillness but through continuous oscillation:

$$E \rightleftharpoons C$$

This produces:

Limit cycles

Adaptive self-organization

Metastable states

Evolutionary progression

Sociocultural rhythms

2.5 Contraction Limit: Indistinguishable Unity

A unique contribution of UECT is the claim that contraction's limit does not lead to nothingness.

Instead, it approaches a state of:

Identity

Indistinguishability

Maximal coherence

Minimal differentiation

This limiting state is the mathematical and metaphysical foundation for UECT's negation of absolute nothingness.

3. UECT and the Negation of Nothingness

3.1 Why absolute nothingness cannot exist

3.2

"Nothingness," defined as the total absence of interaction, relation, or potential, is incompatible with UECT because:

1. Contraction does not approach zero-reality, but zero-difference.

Even at maximal contraction, relational tension remains.

2. Any E-C oscillation requires a non-zero substrate.

Movement cannot arise from absolute absence.

3. Resonance implies universal interconnection.

If all things resonate, a field of relation always persists.

Thus, UECT posits that what appears as "nothingness" in traditional metaphysics is actually a state of perfect unification, not the annihilation of being.

3.2 The unified field as “structured potential,” not void

3.3

The contraction limit resembles:

The quantum vacuum

A symmetry-rest state

A minimal-information configuration

These states are not “nothing,” but the densest possible form of potential.

UCT therefore reframes metaphysical nothingness as a misinterpretation of ultra-contracted unity.

3.4 Philosophical implication

3.5

UCT stands in contrast to:

Existential nothingness

Nihilistic void

Absolute ontological negation

Instead, it offers:

Existence as unbroken continuity.

Being as dynamic interplay.

Unity as the nearest approach to “nothing,” but never equivalent to it.

This makes UCT a dynamic monistic alternative to void-centered philosophies.

4. Correspondence with Scientific Fields

4.1 Physics

Cosmic expansion $\leftrightarrow$ gravitational contraction

Symmetry breaking $\leftrightarrow$ symmetry restoration

Vacuum fluctuation $\leftrightarrow$ field interaction

4.2 Complexity & Systems

4.3

Feedback cycles

Emergent order

Nonlinear oscillations

Fractal scaling behaviors

4.4 Biology

4.5

Ecological succession

Metabolic regulation

Evolutionary diversification and collapse

4.4 Cognition

Creative divergence

Focused convergence

Alternation between exploration and exploitation

4.6 Society

4.7

Growth and recession

Cultural diffusion and decline

Information spread and concentration

Across all, UECT unifies growth–collapse, diffusion–focus, and creation–unification.

5. Applications of UECT

5.1 Cosmological Modeling

Cyclic universe models

Dark-energy variation

Contraction → unification → re-expansion scenarios

5.2 Quantum Theory

5.3

Resonant interaction networks

Unified-field coherence models

5.4 Cognitive Science

5.5

Alternation of divergent and convergent thinking

Neural oscillation theory

5.4 Social Dynamics

Prediction of growth–collapse cycles

Modeling of information cascades

5.6 Philosophy

5.7

Dynamic monism

Refutation of void metaphysics

Theory of relational being

6. Conclusion

Unified Expansion–Contraction Theory offers a general dynamic framework unifying phenomena across the physical, biological, cognitive, and social domains. Its scientific contributions lie in describing universal oscillatory dynamics through expansion, contraction, and resonance. Its philosophical contribution lies in showing that absolute nothingness is impossible, because contraction culminates not in annihilation but in undifferentiated unity, a state still rich with structure and potential.

Thus, UECT is both:

A unifying scientific theory

And

A metaphysical defense of continuous existence.

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